

Interdisciplinary teaching

This education reference article explains the concept of interdisciplinary teaching and discusses considerations for developing interdisciplinary curriculum.

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In interdisciplinary teaching, educators apply methods and language from more than one academic discipline to examine a theme, issue, question, problem, topic, or experience. Interdisciplinary methods work to create connections between traditionally discrete disciplines such as mathematics, the sciences, social studies or history, and English language arts.

Justification for interdisciplinary teaching

There are many topics that are not addressed in schools because of the breadth and depth of information that is accessible in a globalized, technological society. Much of the curriculum that is contained in textbooks is neither timely or relevant to students' lives. Additionally, the daily schedule often fragments learning so that each teacher is given a defined time block to cover material that will likely be assessed on a state-mandated test. All of these hindrances make it difficult for teachers to engage students in studying any material in depth and to make connections between subject areas and topics. The interdisciplinary model of teaching enables students to see the links between subject areas (e.g. the relationship between literature and history or mathematics and science).¹

Interdisciplinary teaching differs from discipline- and field-based teaching in that it does not necessarily carve out spaces for each individual subject area, and instead, connects content and consciously identifies the relationships between these subjects.

Heidi Jacobs defines interdisciplinary learning as "a knowledge view and curriculum approach that consciously applied methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience."²

Keith Barton and Lynn Smith suggest that interdisciplinary learning is especially important in the early grades so as to "provide authentic experiences in more than one content area, offer a range of learning experiences for students, and give students choices in the projects they pursue and the ways they demonstrate their learning."³ Barton and Smith explain that interdisciplinary units enable teachers to use classroom time more efficiently and address content in depth, while giving students the opportunity to see the relationship between content areas and engage in authentic tasks.

The National Council for Teachers of English (NCTE) also stress the importance of

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interdisciplinary teaching in a position statement on integration of multiple curricula. Based on discussions from a combined meeting of the major national subject-matter organizations, the NCTE explain that “educational experiences are more authentic and of greater value to students when the curricula reflect real life, which is multi-faceted — rather than being compartmentalized into neat subject-matter packages.” NCTE highlights the benefits of interdisciplinary teaching and promote the “natural and logical connections that cut across content areas” which can be organized around “questions, themes, problems, or projects rather than along traditional subject-matter boundaries.”⁴

Considerations for developing interdisciplinary curriculum

- “Students should have a range of curriculum experiences that reflects both a discipline-filed and an interdisciplinary orientation... students cannot fully benefit from interdisciplinary studies until they acquire a solid grounding in the various disciplines that interdisciplinary attempts to bridge.”⁵
- Teachers must design and implement curriculum based on the scope and sequence of the integrated disciplines and be flexible enough to form and revise the curriculum according to the students’ needs.⁶
- “Interdisciplinary curriculum should only be used when the problem reflects the need to overcome fragmentation, relevance, and the growth of knowledge.”⁷
- Interdisciplinary units should be shared with all faculty, administration, and community members so that they can have the opportunity to contribute their knowledge and skills.
- Interdisciplinary units should engage students in epistemological questions such as “What is knowledge?” “What do we know?” and “How can we present knowledge in the schools?”⁸
- Interdisciplinary units offer students the opportunity to see connections and relevance between topics and provide a variety of perspectives.
- Students should be involved in the planning and development of interdisciplinary units.

Jacobs recommends that the development of interdisciplinary units must involve:

- Selecting a focus or thematic topic.
- Generating ideas or connections between related topics.
- Establishing guiding questions for the scope and sequence of the unit.
- Designing activities to fulfill the goals of the unit.⁹

Difficulties with content selection in interdisciplinary courses

As with any approach to education, there are often pitfalls teachers should be aware of

before attempting to implement teaching methods.

- **Potpourri Problem:** Units often become a sampling of knowledge from each discipline; there is a need for strong content scope and sequence for any interdisciplinary unit or course.¹⁰
- **The Polarity Problem:** Because teachers often feel “territorial” about their content areas, they are sometimes threatened when another discipline offers a differing viewpoint from their own.¹¹

In order to address these problems, teachers must have carefully conceived design features (a scope and sequence, a cognitive taxonomy to encourage thinking skills, behavioral indicators of attitudinal change, and a solid evaluation scheme); and they must use both discipline-field-based and interdisciplinary experiences for students in the curriculum.

Related terms

- **Crossdisciplinary:** Viewing one curricular subject from the standpoint of another (for example physics of music and the history of math).¹²
- **Multidisciplinary:** The combination of several content areas that are concerned with one problem, but without intentional integration.¹³
- **Plurdisciplinary:** The combination of content areas that are somewhat related; e.g. math and physics, French and Latin.¹⁴
- **Transdisciplinary:** “Beyond the scope of the disciplines; that is, to start with a problem and bring to bear knowledge from the disciplines.”¹⁵
- **Curriculum integration** and **thematic teaching** are also terms used to describe teaching methods that include interdisciplinary studies.

Notes

1. Jacobs, H. (1989). *Interdisciplinary Curriculum: Design and Implementation*. Alexandria, VA: Association for Supervision and Curriculum Development. (p. 4-5). [\[return\]](#)
2. Jacobs, H. (1989), p. 8. [\[return\]](#)
3. Barton, K. & Smith, L. (2000). "Themes or Motifs? Aiming for Coherence Through Interdisciplinary Outlines." *The Reading Teacher*. 54(1), pp. 54-63. [\[return\]](#)
4. National Council for Teachers of English (1995). "Position Statement on Interdisciplinary Learning, Pre-K to Grade 4." <http://www.ncte.org/positions/statements/interdisclearnprek4>. [\[return\]](#)
5. Jacobs, H. H. & Borland, J.H. (1986). "The Interdisciplinary Concept Model: Design and Implementation." *Gifted Child Quarterly*. Winter. [\[return\]](#)
6. Jacobs, H. (1989), p. 9-10. [\[return\]](#)
7. Jacobs, H. (1989), p. 10. [\[return\]](#)
8. Jacobs & Borland. (1986). [\[return\]](#)

9. Jacobs, H. (1989) [\[return\]](#)
10. Jacobs, H. (1989), p. 2. [\[return\]](#)
11. Jacobs, H. (1989), p. 2. [\[return\]](#)
12. Meeth, L.R. (1978). "Interdisciplinary Studies: Integration of Knowledge and Experience." *Change*. 10, p. 6-9. [\[return\]](#)
13. Piaget, J. (1972). *The Epistemology of Interdisciplinary Relationships*. Paris: Organization for Economic Cooperation and Development. [\[return\]](#)
14. Piaget, J. (1972). [\[return\]](#)
15. Jacobs, H. (1989), p. 8. [\[return\]](#)

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